

## REMARKS

This is in response to the Office Action mailed January 30, 2003, setting a shortened statutory period for response of three (3) months. Applicants have filed concurrently herewith a Petition for a two-month extension of time bringing the time to respond to this Office Action to June 30, 2003. As this reply has been filed within this time period, it is timely filed. The Commissioner is hereby authorized to charge any additional fees to Deposit Account number 02-1818.

Claims 1, 16, 18-27, 33-42, 48-61, 67-69, 71, 84, 86-95, and 101-103 are currently pending in the present application. Claims 1, 18, 20, 35, 52, 69, and 86 have been amended herein. Claims 104-117 have been added. Claims 1, 18, 35, 52, 69, and 86 have been amended to exclude or clarify species of the first and second components of the polymer blend of the invention. Claim 20 was amended to correct a typographical error. Applicants assert that no new matter has been added in light of the above amendments.

The Examiner has rejected all of the pending claims under 35 U.S.C. §102 (b), or alternatively under §103 (a) as being unpatentable over *Babrowicz et al.* (WO 97/36741). Claims 1, 16, 18-21, 24-26, 33-36, 38-42, 48-55, 57-61, 67, 68, 69, 84, 86-89, 91-95, and 101-103 were further rejected under 35 U.S.C. §102 (b), or alternatively under §103 (a) as being unpatentable over *Lundell et al.* (U.S. 4, 401, 536).

### A. Babrowicz et al. Does Not Anticipate or Render Obvious Claims 1, 16, 18-21, 23-27, 33-36, 38-42, 48-55, 57-61, 67-69, 84, 86-89, 91-95 and 101-103

Claims 1, 16, 18-21, 23-27, 33-36, 38-42, 48-55, 57-61, 67-69, 84, 86-89, 91-95 and 101-103 stand rejected under 35 U.S.C. §102 (b), or alternatively under §103 (a) as being unpatentable over Babrowicz et al. (WO 97/36741). In addition, claims 22, 37, 56, 71 and 90 stand rejected under 35 U.S.C §103(a) as being unpatentable over Babrowicz et al. Applicants respectfully traverse these rejections and request withdrawal of the same.

Independent claims 1, 18, 35, 52, 69 and 86 of the present invention as amended are directed to a non-diene containing polymer blend, monolayer and multilayer films made with the non-diene containing polymer blend, and methods of fabricating the monolayer and multilayer films. The non-diene containing polymer blends and films of claims 1, 18, 35, 52, 69 and 86 contain a first component selected from the group consisting of: (1) ethylene and  $\alpha$ -olefin

copolymers having a density of less than about 0.915 g/cc, and (2) ionomers; and a second component selected from the group consisting of: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers, (4) cyclic olefin containing polymers, and (5) bridged polycyclic containing polymers.

*Babrowicz et al.* discloses a polymer blend and multilayer film utilizing the polymer blend in at least one layer. The polymer blend, which is capable of being cross-linked, must contain a Polymeric Crosslink Enhancer (PCE) which is formed from monomeric units derived from a) at least one polyene monomer, b) at least one C<sub>2</sub>-C<sub>20</sub> olefinic monomer; and optionally c) at least one or more copolymerizable monomers other than a or b. (See, *Babrowicz et al.* at page 12, lines 13-16). The Examiner states that *Babrowicz et al.* discloses a film containing a blend of a polyolefin such as a metallocene generated ethylene/octene copolymer having a density of 0.901 g/cc, and ethylene propylene diene monomer (EPDM) as in Applicants' propylene containing polymer. (See, Office Action of 1/30/03 at page 2, last two paragraphs, and Office Action of 7/29/02 at pages 3-5).

*Babrowicz et al.* is particularly directed to the use of a PCE, or Polymeric Crosslink Enhancer to selectively enhance the crosslinking with respect to a certain layer or layers of a multilayer film. (See, *Babrowicz et al.* at p. 7, lines 19-27). The PCE, composed of at least one polyene monomer, at least one C<sub>2</sub> - C<sub>20</sub> olefin monomer and optionally a third copolymerizable monomer, when added to a film layer results in a higher degree of cross-linking than other layers. (See, *Babrowicz et al.* at p. 7, line 28 to p. 8, line 11). *Babrowicz et al.* defines a polyene as any unsaturated aliphatic or a alicyclic compound containing at least four carbon atoms in a chain and having at least two carbon-carbon double bonds. The polyenes exemplified by *Babrowicz et al.* are EPDMs, and the compounds listed on p. 12, line 19 to p. 13, line 12. Thus, the polyenes may be dienes or compounds containing more than two double bonds.

Significantly, the disclosure in *Babrowicz et al.* teaches that the cross-linked layer containing the PCE is difficult to heat seal. Accordingly, *Babrowicz et al.* states that "the performance of the sealant layer for its intended purpose is generally lowered when crosslinking is induced." (*Babrowicz et al.*, p. 5, lines 11-12). Further, *Babrowicz et al.* discloses an example of a multilayered film wherein the heat-sealable layer is a layer not containing the PCE. (See, *Babrowicz et al.*, p. 29, lines 16-24).

In contrast, the Applicants claim a polymer blend which does not contain a PCE or diene and is both cross-linked by irradiation, and is capable of forming heat seals. A significant advantage of the present invention is that an irradiated monolayer film structure which is heat sealable can be manufactured. The cross-linkable polymer of *Babrowicz et al.* must be used in conjunction with at least one other layer to form a heat sealable structure. Thus, *Babrowicz et al.* teaches away from the claimed invention.

As demonstrated in the examples of the present invention (See, Specification at p. 17-18), several non-diene containing formulations have been developed which meet the claimed physical and performance requirements, such as heat sealing. The examples of the present invention disclose blends of: (1) ULDPE and homopolymers of propylene, and (2) ULDPE and propylene and ethylene copolymers, which when cross-linked by radiation (or other means) are capable of forming heat seals. This disclosure supports the non-diene claim limitation of claims 1-103, as the examples demonstrate that the use of a diene is not needed to produce the product of the present invention. Thus, the amendments to claims 1, 18, 35, 52, 69 and 86 are supported by the disclosure.

Although applicants do not explicitly disclose the use of a non-diene polymer blend, the Federal Circuit has held that in absence of an explicit disclosure to support a claim limitation, the claim limitation is allowable so long as the originally filed specification clearly conveys to those of ordinary skill in the art that the applicants had possession of the invention as claimed. *In re Wertheim*, 191 U.S.P.Q. 90, 99 (C.C.P.A 1976). The examples in the specification clearly convey to one of ordinary skill in the art that the present invention may be carried out using non-diene containing polymer blends.

Applicants respectfully assert that *Babrowicz et al.* fails to anticipate the claimed invention, as amended herein. The present invention, as amended in independent claims 1, 18, 35, 52, 69, and 86, is directed to a non-diene containing polymer blend, monolayer and multilayer films made with the non-diene containing polymer blend, and methods of fabricating the monolayer and multilayer films, which includes a first component selected from the group consisting of: (1) ethylene and  $\alpha$ -olefin copolymers having a density of less than about 0.915 g/cc, and (2) ionomers; and a second component selected from the group consisting of: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers, (4) cyclic olefin containing polymers, and (5) bridged polycyclic hydrocarbon containing polymers.

Accordingly, Applicants respectfully request that the rejection of claims 1, 16, 18-27, 33, 34, 35-42, 48-51, 52-61, 67, 68, 84, 86-95, and 101-103 on the basis of 35 U.S.C. §102(b) and § 103(a) be withdrawn.

B. Babrowicz et al. Does Not Anticipate or Render Obvious New Claims 104-117

New claims 104-109 are directed to a polymer blend, monolayer and multilayer films made with the polymer blend, and methods of fabricating the monolayer and multilayer films. The claims disclose a blend *consisting essentially of* a first component selected from the group consisting of: (1) ethylene and  $\alpha$ -olefin copolymers having a density of less than about 0.915 g/cc, and (2) ionomers, the first component being present in an amount from about 99% to about 55% by weight of the blend; and a second component in an amount by weight of the blend from about 45% to about 1% and is selected from the group consisting of: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers (4) cyclic olefin containing polymers, and (5) bridged polycyclic hydrocarbon containing polymers. Claims 104-109 are written to exclude components that would materially affect the blend, such as the PCEs of *Babrowicz*. For the reasons argued above, claims 104-109 are distinguished from *Babrowicz et al.*

CE 9x  
New claims 110-115 are directed to a polymer blend, monolayer and multilayer films made with the polymer blend, and methods of fabricating the monolayer and multilayer films. The claims disclose a blend consisting of a first component selected from the group consisting of: (1) ethylene and  $\alpha$ -olefin copolymers having a density of less than about 0.915 g/cc, and (2) ionomers, the first component being present in an amount from about 99% to about 55% by weight of the blend; and a second component in an amount by weight of the blend from about 45% to about 1% and is selected from the group consisting of: (1) propylene containing polymers, (2) polybutene polymers, (3) polymethylpentene polymers, (4) cyclic olefin containing polymers, and (5) bridged polycyclic hydrocarbon containing polymers. For the reasons argued above, claims 110-115 are written to exclude PCEs and are thus distinguished from *Babrowicz et al.*

New claims 116 and 117 are directed to monolayer films which are subject to cross-linking radiation and are capable of being heat sealed. As indicated above, *Babrowicz et al.* teaches away from heat sealing a film which has been irradiated.

Therefore, applicants assert that new claims 104-117 do not contain new matter and are distinguished over the disclosure in *Babrowicz et al.*

C. *Lundell et al.* Does Not Anticipate or Render Obvious Applicants' Invention

Claims 1, 16, 18-21, 24-26, 33-36, 38-42, 48-55, 57-61, 67, 68, 69, 84, 86-89, 91-95, and 101-103 are rejected under 35 U.S.C. §102 (b), or alternatively under §103 (a) as being unpatentable over *Lundell et al.* Applicants respectfully traverse these rejections and request withdrawal of the same.

Independent claims 1, 18, 35, 52, 69, and 86, have been amended such that the first component is selected from the group of: (1) ethylene and  $\alpha$ -olefin copolymers having a density of less than about 0.915 g/cc, and (2) ionomers; and the polymers of the second component are selected from the group of: (1) propylene homopolymers (2) propylene containing copolymers, (3) polybutene polymers, (4) polymethylpentene polymers, and (5) bridged polycyclic hydrocarbon containing polymers. New claims 104-117 disclose similar compounds for the first component.

*Lundell et al.* discloses a blend of radiation-stabilized polypropylene with a copolymer of ethylene and a comonomer selected from the group consisting of vinyl esters of saturated carboxylic acids having up to 8 carbon atoms in the acid moiety, and alkyl esters of  $\alpha,\beta$  ethylenically unsaturated carboxylic acids having from 3 to 8 carbon atoms in the acid moiety and from 2 to 8 carbons in the alkyl moiety. The present invention, as amended, is directed to a blend which includes a first component of an ethylene and  $\alpha$ -olefin copolymer or an ionomer.

[ The disclosure of *Lundell et al.* is limited to blends which include polypropylene and copolymers of ethylene and an ester. Therefore, the polymer blends of the present invention are not anticipated or obviated by the disclosure in *Lundell et al.*

In light of the amendments and arguments above, Applicants assert that *Lundell et al.* does not teach or suggest the polymer blend of the present invention, as amended herein. Thus Applicants request that the rejection of claims 1, 16, 18-21, 24-26, 33-36, 38-42, 48-55, 57-61, 67, 68, 69, 84, 86-89, 91-95, and 101-103 over *Lundell et al.* be withdrawn.

**CONCLUSION**

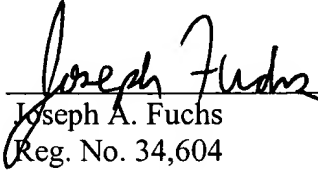
In view of the foregoing remarks, Applicants submit that all pending claims are in a condition for allowance and respectfully request a notice of the same.

Respectfully submitted,

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BY



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